

Quality Procedure (QP) Interim Change Notice (ICN)

Effective Date: **6/3/05**

1 Page(s)

Section 1: Description of Change (Requester completes)1. Document Catalog No.: **ER2005-0329**2. QP & Rev. No.: **5.7, R2**3. ICN No.: **2**4. QP Title: **Notebook Documentation for Environmental Restoration Technical Activities**

5. Description of Change:

Add a new paragraph to section 6.2, NoteBook Entries, that address timeliness of recordings from DOE-O5480.19, Conduct of Operations at Nuclear Facilities. Add new paragraph 6.2.19 that reads as follows:

6.2.19 Information should be promptly recorded in the notebooks at near real time as observations or events transpire. Delaying the recording of activities or events often leads to incomplete or inaccurate entries.

6. Attachments Modified, Added, or Removed:

☐ Yes☒ No

7. ICN Justification:

The lack of "timeliness of entries" guidance required by DOE-O-5480.19 was found missing during conduct of operations training material and policy manual development. This change will allow QP-5.7 to be cited as the reference for ENV-ECR logkeeping activities.

8. Requester: Chuck Ladd

(Print name, then sign.)

5/24/05

(Date)

Section 2: Evaluation and Approval (PTL, Technical Reviewer, and QPPL complete)

9. Evaluation Remarks: (If none, enter N/A)

10. Team Leader: Phil Noll

(Print name, then sign.)

6/1/05

(Date)

11. Technical Reviewer: Larry Maassen

(Print name, then sign.)

5/24/05

(Date)

12. QPPL: Dianne Wilburn

(Print name, then sign.)

5/24/05

(Date)

QP-4.1, R5

**Los Alamos National Laboratory
RRES-Remediation Services**

Quality Procedure Interim Change Notice (ICN)

Effective Date: **10/04/2001**; Reviewed Date: **05/06/2004**

Section 1: Description of Change (Requestor completes)

1. Document Catalog No.: ER2001-0825

2. QP No.: 5.7, R2

3. Revision/Interim Change No.: 1
(current)

4. QP Title: Notebook Documentation for Environmental
Restoration Technical Activities

5. Description of Change: (Attach marked-up pages if necessary)

ADD:

6.1.4 Notebooks are project specific. A separate notebook shall be maintained for each different project and/or task.

Add the following before the current text of Section 7.0 Records:

Note: Notebooks and logbooks are irreplaceable one-of-a-kind records and are subject to loss, damage, or destruction until they are submitted as final records to the Records Processing Facility. They are often utilized for months or even years until they are full or a project is terminated. Therefore, extra precautions are necessary to protect these records.

7.1 Notebook and logbook "owners" shall photocopy these documents quarterly and submit the copies to the RPF.

7.2 Each quarter, sections of the notebooks and logbooks that were not copied the previous quarter will be copied and submitted.

7.3 The RPF shall maintain these copies, filed by ER Document Catalog Number, in a fireproof filing cabinet until the final, completed record is submitted for processing. The copies may be discarded upon receipt of the original notebooks and logbooks.

7.4 Notebooks/logbooks are considered final records when the project is terminated or the notebooks are full and no longer required by the "owner."

6. Attachments Modified, Added, or Removed: ☐ Yes ☒ No

7. Justification for ICN:

Notebooks and logbooks are irreplaceable one-of-a-kind records and are subject to loss, damage, or destruction until they are submitted as final records to the Records Processing Facility. They are often utilized for months or even years until they are full or a project is terminated. Therefore, extra precautions are necessary to protect these records.

8. Requestor: E. Jeanne Hamilton

(Print name, then sign)

(Date)

Section 2: Evaluation and Approval (QPPL and the Focus Area Leader completes)

9. Evaluation Remarks: (If none enter N/A)

N/A

10. Focus Area Leader: Larry Maassen

(Print name, then sign)

(Date)

11. QPPL: Larry Maassen

(Print name, then sign)

(Date)

QP-4.1

Los Alamos
Environmental Restoration Project

[Using a token card, click here to record "self-study" training to this procedure.](#)

If you do not possess a token card or encounter problems, contact the RRES-ECR training specialist.

Identifier: QP-5.7	Revision: 2	Effective Date: 7/11/01	 <p>environmental restoration project</p> <p>A Department of Energy Environmental Cleanup Program</p>
ER Document Catalog Number: ER2001-0197			
Author: Andrew E. Gallegos			

Environmental Restoration Project Quality Procedure

for:

Notebook Documentation for Environmental Restoration Technical Activities

☒ **NES Approved**

Responsible Division Leader: Doug Stavert	Signature & Date  12/14/05
Responsible Line Manager: Alison Dorries	Signature & Date  12/14/05

Los Alamos

NATIONAL LABORATORY

Los Alamos, New Mexico 87545

Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the University of California for the United States Department of Energy under contract W-7405-ENG-36.

Revision Log

<i>Revision No.</i>	<i>Effective Date</i>	<i>Prepared By</i>	<i>Description of Changes</i>	<i>Affected Pages</i>
R0	12/11/98	Andrew E. Gallegos	New Procedure	All
R1	03/27/00	Andrew E. Gallegos	Format revision	All
R2	07/11/01	Andrew E. Gallegos	Added Sections 2.0 Scope, 3.0 References, subsection addressing lessons learned, record retention and submission and photograph control and entry into a notebook. All other section have been revised with minor and major changes.	All

Notebook Documentation for Environmental Restoration Technical Activities

Table of Contents

1.0 PURPOSE	4
2.0 SCOPE	4
3.0 REFERENCES	4
4.0 DEFINITIONS	4
5.0 RESPONSIBLE PERSONNEL.....	4
6.0 PROCEDURE	6
7.0 RECORDS.....	6
8.0 TRAINING.....	13
9.0 ATTACHMENTS.....	13

Notebook Documentation for Environmental Restoration Technical Activities

1.0 PURPOSE

This Quality Procedure (QP) states the responsibilities and describes the process for documenting environmental restoration technical activities (see subsection 4.2) for the Environmental Restoration (ER) Project.

2.0 SCOPE

This QP is a mandatory document and shall be implemented by all ER Project personnel when documenting field activities for the ER Project.

Note: Subcontractors performing work under the ER Project's quality program may follow this QP for developing and maintaining notebooks or may use their own procedure(s) as long as the substitute meets the requirements prescribed by the ER Project Quality Management Plan and is approved by the ER Project's Quality Program Project Leader (QPPL) before the commencement of the designated activities.

3.0 REFERENCES

ER Project personnel using this procedure should become familiar with the contents of the following documents to properly implement this QP.

- ER Project Quality Management Plan located at http://erinternal.lanl.gov/home_links/Library_proc.htm.
- QP-2.2, Personnel Orientation and Training
- QP-3.2, Lessons Learned
- QP-4.4, Record Transmittal to the Records Processing Facility
- QP-4.10, Document Development and Approval Process: Peer Review Not Required
- QP-5.2, Control of Measuring and Test Equipment

4.0 DEFINITIONS

- 4.1 Consumable Calibration Standard— A secondary standard used by laboratory and field personnel to verify the calibration of Measurement and Test Equipment (M&TE).

- 4.2 Technical Activity Investigation — A technical activity investigation is any observation, identification, description, experimental study, or analysis and explanation of information and/or data (e.g., site investigations and field activities).
- 4.3 Technical Notebook — A technical notebook (hereafter referred to as a notebook) is a record of the methodology, observations and results of technical activity investigations. Examples of notebooks are as follows:
- 4.3.1 Electronic Notebook — An electronic device (e.g., computer) used as a tool to document a technical activity. Documentation and/or data generated by an electronic notebook are not considered a record until a hard copy is submitted in accordance with this procedure and QP-4.4.
- 4.3.2 Field Notebook — A field notebook is generally used to record activities performed in the field or to compile field data.
- 4.3.3 Laboratory Notebook — A laboratory notebook is generally used to record activities performed in the laboratory or to compile laboratory data.
- 4.3.4 Log Notebook — A log notebook is generally used to record tabulated data (e.g., history of calibrations, sample tracking, numerical data, or other technical data); a log notebook may be identified as a “Daily Activity Log”.
- 4.4 Primary Record — A document that is identified as the first in a series of documents that will be submitted as a record (e.g., First notebook in a series of notebooks).
- 4.5 Record — A book, paper, map, photograph, machine-readable material, or other documentary material, regardless of physical form or characteristics, made or received by the ER Project in connection with the transaction of business and preserved or appropriate for preservation by the ER Project or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the ER Project or because of information value of data in them (Ref. 44 U.S.C. 3301).
- 4.6 Supervisor — An individual assigned to the ER Project who is a group, focus, task, team or project leader or a manager with the authority and responsibility to direct and authorize ER Project activities. A supervisor may also be an individual directed by the ER Program Manager or Focus Area Leader to act in her or his behalf.
- 4.7 Traceability Designator (Document Catalog Number) — A word or code that aids in the ability to trace the history, application, or location of an activity, item, data, or sample using recorded documentation. For ER Project records,

a traceability designator is a unique alphanumeric identifier assigned to a primary record, as defined in section 4.4.

- 4.8 Unqualified Data — Data that has not been validated and/or does not have a defined set of performance-base (e.g., data quality objectives) criteria to a body of data, which may result in qualification of the data. Unqualified data may also be a result of analytical samples lacking an appropriate chain-of-custody.

5.0 RESPONSIBLE PERSONNEL

The following personnel are responsible for activities identified in Section 6.0 of this procedure.

- 5.1 ER Project personnel conducting ER laboratory and field technical investigations
- 5.2 Quality Liaison
- 5.3 Supervisor
- 5.4 Technical Reviewer

6.0 PROCEDURE

Note: ER Project personnel may produce paper copies of this procedure printed from the controlled-document electronic file located at http://erinternal.lanl.gov/home_links/Library_proc.htm. However, it is their responsibility to ensure that they utilize and train to the current version of this procedure. The author may be contacted if text is unclear. Contact the Document Control Coordinator if the author cannot be located.

6.1 Notebooks

- 6.1.1 Bound books with blank, sequentially numbered pages may be used for documenting detailed, chronological technical activity investigations.

Note: It is recommended that ER Project personnel use notebooks that are manufactured by the Scientific Notebook Company and/or by ACCO Brands, Incorporated.

- 6.1.2 Electronic notebooks (computers) (see subsection 4.3.1) may be used as a tool to document a technical activity; however, the electronic copy of the file is not the record. A hard copy of the notebook entries becomes the record and is maintained in a binder or folder (see Section 6.2.3). Electronic notebook entries shall be printed at the end of each day (if there is an entry).

- 6.1.3 Loose-leaf notebooks (e.g., 3 ring binders) may be used for documenting technical activities, collecting attachments, and as the means for maintaining hard copies from electronic media entries. If loose-leaf notebooks are to be used, the individual maintaining the notebook must ensure that all entries (i.e., individual page entries) are maintained to preclude the loss and/or manipulation of data.

6.2 Notebook Entries

ER Project personnel are responsible for the following:

- 6.2.1 Entries are made with photocopyable indelible ink (preferably black or dark blue). Entries should be readable, clear, and distinct.
- 6.2.2 Notebook pages shall be numbered sequentially using alpha or numerical characters or a combination of the two if the notebook is subdivided and/or if subsequent notebooks are used for the continuation of data entry.
- 6.2.3 Notebooks shall contain the following information on the first numbered page:
- in accordance with QP-4.10, the ER Project document catalog number is obtained from the “Document Catalog” link found on the ER Project internal homepage (<http://erinternal.lanl.gov>).
 - the name and title of the ER Project worker responsible for the notebook and the names and title of those individuals who make notebook entries.
 - a statement of purpose and objectives and a description of the work to be performed (see Attachments A and C).
- 6.2.4 Enter a table of contents or an index that lists the major sections of the notebook, and the associated page numbers, and any applicable attachments to the notebook, (e.g., Attachment 1, 22 pages) (see Attachment F).
- Note:** Care should be taken to leave the necessary number of pages blank to complete the table of contents or the index. Pages that are not used should be crossed out with a single line and initialed and dated.
- 6.2.5 An entry shall be corrected by drawing a single line through the erroneous information; inserting or indicating the correct information, and initialing and entering the date the correction was made in close proximity of the correction. White out or correction tape is not to be used.

- 6.2.6 No portions of text on a page shall be obliterated (e.g., due to tearing or folding of page edges or to hole punching). Unintentional obliterations must be corrected in accordance with subsection 6.2.5.
- 6.2.7 **ER Project personnel** shall ensure no portion of text entered into a notebook is missing (e.g., pages removed or deleted etc.), without an entry made to explain the removal and/or deletion.
- 6.2.8 An incomplete or illegible entry shall be corrected by transcribing, regenerating, or enhancing (illegible information only) the information. An insertion or enhancement (e.g., darkening a faint, illegible character) is considered a change and must be initialed and dated.
- 6.2.9 Entries that are pasted in (e.g., figures, tables, computer generated information, photographs etc.) must be initialed and dated. The initial and date must be entered on the entry and continued onto the page of the notebook.
- 6.2.10 At the beginning of each work day and/or shift enter the date and shift for which technical investigations occur (e.g., June 18, 2001, second shift etc.)
- 6.2.11 At the beginning of each entry enter the time of the entry (e.g., 0830 and/or 8:30 am). For field notebooks, enter the names of the field team members making the entries.
- 6.2.12 Sign or initial and date the entries no less frequently than at the end of each day that information is entered into the notebook.
- 6.2.13 For work governed by an ER Project Standard Operating Procedure (SOP), the notebook must contain the following:
- entries shall be traceable to the governing procedure by entering the identification number and revision of the applicable SOP being used (e.g., LANL-ER-SOP-01.05, R0). This entry shall be made on the date that the SOP is being used and/or a statement may be entered that links an applicable document (e.g., Statement of Work, Field Implementation Plan, Readiness Review Checklist or a form that is identified in the applicable procedure etc.) that identifies the SOP. All applicable SOPs may also be identified (e.g., one time entry) in front of the notebook.
 - ER Project personnel shall ensure an entry is made to properly identify all applicable SOPs that have been revised.
 - entries that address calibration of equipment or use of standards will be made in accordance with Attachments B and D of this procedure.

- 6.2.14 A statement is required for technical activities that are not covered by a SOP or for which the governing SOP is found to be inadequate. The entry should provide sufficient information to explain and/or describe the process and/or method used.
- 6.2.15 If a procedure is found to be inadequate, the individual making the discovery shall inform his/her supervisor. The supervisor in turn shall inform the QPPL and/or the author of the problem(s) and provide the appropriate comment(s) to resolve them.
- 6.2.16 If computer software has been used to generate data, the person making the entry shall state whether or not the codes and calculations were developed and documented in accordance with ER Project quality assurance requirements (see ER Quality Management Plan for the Los Alamos National Laboratory Environmental Restoration Project, Criterion 6.0, Design). Commercial or government off-the-shelf software is exempt from qualification unless modified.
- 6.2.17 Data references (e.g., standards, regulations, journals, handbooks, documented personal communications, laboratory notebooks, or other sources) shall be identified and entered in the notebook. A one-time entry at the beginning of the notebook or at first use may be made.
- 6.2.18 **ER Project personnel** shall enter on and/or adjacent to all photographs pasted into and/or made as an attachment to a notebook as follows:
- location where photograph was taken;
 - orientation to “North, South, West, East” etc.;
 - description of photograph content;
 - name of individual who took the photograph;
 - date and time photograph was taken, and;
 - purpose for the photograph (e.g., SOW requirement, additional information to address a process and/or need etc.).

6.3 Notebook Attachments

- 6.3.1 **ER Project personnel** shall identify attachments (e.g., forms, maps, photographs, charts, graphs, computer printouts, data binders, optical disk, or electronic media) traceable to the notebook (see Section 6.2). The preferred method to identify an attachment is to record the notebook’s ER Project document catalog number, attachment number and the page number (sequential), and total

pages on each page of the attachment and title (e.g., ER2001-0001, Attachment 1, Surface Water Site Assessment, Page 1 of 200 etc., total pages 200).

- 6.3.2 Before submitting the notebook and the attachment(s) as a record, the total number of pages, document catalog number and the attachment number shall be noted in the notebook Table of Contents or index (see Attachment F).

Note: Documents such as chain-of-custody forms, sample collection forms, tailgate safety forms, etc. may be submitted to the Records Processing Facility in several ways (i.e., as an attachment to a notebook, as a notebook, or as part of a records package). ER Project personnel must use and enter the ER Project document catalog number associated with the governing notebook on all attachments.

6.4 Notebook Data Evaluation

- 6.4.1 The **supervisor** shall review and ensure completeness of data values contained in the notebook. Reviews shall be performed at a minimum as follows:

- daily, for work duration of one week to two months;
- weekly, for work duration of two to six months, and;
- monthly, for work duration of six months or longer.

- 6.4.2 The supervisor shall enter into the log an entry that verifies that a review was conducted and that the data review was acceptable or not. The entry shall be signed and dated.

Note: All values other than those from prototype activities are acceptable unless explicitly rejected.

- 6.4.3 Rejected data will be identified by entering “Rejected Data” next to data, or by entering a statement in the notebook that identifies the unacceptable data and provides an explanation for rejection, followed by a signature or initials and date.

- 6.4.4 If the ER Project worker who makes the data entry has reason to believe that data may be suspect or have been compromised because of equipment malfunction (e.g., M&TE accuracy) or failure during routine daily analysis or experimentation, the responsible **supervisor** will ensure that the data are evaluated by a qualified individual.

- 6.4.5 If data are suspect because M&TE or standards are lost, out of calibration, or could not be calibrated, the **supervisor** conducts

and/or assigns a qualified person to evaluate the issue in accordance to QP-5.2, Control of Measuring and Test Equipment.

- 6.4.6 If unqualified data are used in laboratory and/or field technical investigations, the **supervisor** ensures that the data are identified as unqualified data each time they are used.

6.5 Technical Review of Notebooks

- 6.5.1 **ER Project personnel** responsible for maintaining notebooks shall request an initial review of their notebook by a Technical Reviewer and a Quality Liaison within one week of the initial notebook entry. Subsequent reviews shall be performed as addressed in subsection 6.4.1.

- 6.5.2 **Technical reviewers** shall ensure that notebook entries meet the following criteria:

- 6.5.2.1 Sufficient detail (see Attachments A through D) is provided such that another similarly qualified individual could retrace the investigation and confirm the results, or could repeat the investigation and achieve comparable results without communicating with the original investigator.

- 6.5.2.2 The software used is applicable to the investigation performed and the input parameters and assumptions are documented and valid (see Section 6.2.16).

- 6.5.2.3 Information in the notebook is applicable to the notebook activity listed in the notebook according to Section 6.2.3.

- 6.5.2.4 Entries are correct, accurate, technically adequate, and complete.

- 6.5.3 **ER Project personnel** shall ensure that a technical review is performed on a notebook and its attachments and/or data on a periodic basis (see Section 6.5 Note), when a notebook is closed out, or when the activity or activities are terminated, which ever occurs first.

- 6.5.4 **ER Project personnel** shall select a technical reviewer who has the expertise necessary to understand the reviewed work, did not perform the reviewed work, and is trained in accordance with Section 8.0 of this procedure.

Note: The technical reviewer may be the supervisor, provided the above requirements are met.

- 6.5.5 **ER Project personnel** shall correct each entry that does not meet the above requirements. (See subsections 6.2.5 through 6.2.8)

- 6.5.6 **ER Project personnel** shall ensure that the technical reviewer enters the following statement, on the notebook page after the last entry reviewed or in a section designated for review,

“I have reviewed the entries on pages (enter page number) through (enter page number) and they meet the requirements described in QP-5.7, Notebook Documentation for Environmental Restoration Activities. All review comments noted have been corrected and/or resolved.”

followed by the technical reviewer’s printed name, signature, and date.

6.6 Quality Integration and Improvement (QII) Review of Notebooks

- 6.6.1 **ER Project personnel** shall ensure that a QII review is performed after each technical review of a notebook is completed.

- 6.6.2 A **Quality Liaison** shall perform a review of the notebook (as requested by the responsible ER Project personnel), including its attachments and/or data, if applicable, to ensure the following conditions are met:

- the entries are legible and the configuration of the notebook meets the requirements of this procedure and
- technical reviews were performed and documented according to Section 6.5.

- 6.6.3 **ER Project personnel** shall correct all entries that do not meet the requirements stated in Section 6.5.

- 6.6.4 The **Quality Liaison** shall enter a statement, as follows, on the notebook page after the last entry reviewed or in a section designated for review,

“I have reviewed the entries on pages (enter page number) through (enter page number) and they meet the requirements described in QP-5.7, Notebook Documentation for Environmental Restoration Technical Activities. All review comments noted have been corrected and/or resolved.”

followed by the Quality Liaison’s printed name, signature, and date.

6.7 Notebook Submission as a Record

- 6.7.1 **ER Project personnel** shall ensure notebooks are submitted to the Records Processing facility as they are completed, closed out, last entry made and when the technical and quality liaison reviews have been completed.

6.7.2 **ER Project personnel** are not to retain those notebooks where written entries are no longer possible and/or written entries are continued on a new (continuation) notebook.

6.8 Perform Lessons Learned

During the performance of work, **ER Project personnel** shall identify, document and submit lessons learned, as appropriate in accordance with QP-3.2, Lessons Learned, located at: http://erinternal.lanl.gov/home_links/Library_proc.htm.

7.0 RECORDS

ER Project personnel are responsible for submitting the following records (processed in accordance with QP-4.4, Record Transmittal to the Records Processing Facility) to the Records Processing Facility.

- 7.1 Completed and reviewed notebook.
- 7.2 Notebook attachments and/or data, as applicable.
- 7.3 Completed document signature form

8.0 TRAINING

- 8.1 ER Project personnel using of this QP are trained by reading the procedure. **ER Project personnel** shall ensure the training is documented in accordance with QP-2.2, Personnel Orientation and Training, and is entered in the ER Project Training Database located at <http://erinternal.lanl.gov/Training/Training.asp>.
- 8.2 The **supervisor** shall monitor the proper implementation of this procedure and ensures that relevant team members have completed all applicable training assignments in accordance with QP-2.2, Personnel Orientation and Training.

9.0 ATTACHMENTS

- Attachment A: Entries for Field Technical Investigations (2 pages)
- Attachment B: Notebook Entries for Field and Laboratory Measuring and Test Equipment (M&TE) (2 pages)
- Attachment C: Logbook Entries for Laboratory Technical Investigations (2 pages)
- Attachment D: Consumable Standards Entries for Laboratory Technical Investigations (2 pages)
- Attachment E: Example of an Acceptable Notebook Entry (1 page)

Attachment F: Table of Contents Example (1 page)

Entries for Field Technical Investigations

A. Description

Enter a statement that describes the proposed work, or reference the study plan, other planning documents, or implementing documents that describe the work to be done. The description may include reference to other notebooks, manuals, texts, etc. For field investigations describe the location where the field activities are to take place, and make reference to a map or photograph that shows the location of the site.

Note: This entry should be made one time at the beginning of the notebook. If the proposed work requirements and/or processes change, an entry must be made to address the change.

B. Methods and Objectives

State the methods (reference the applicable SOP) to be employed and objectives of the work. Work performed and the results obtained must be descriptive and entered in detail. Changes to methods shall be documented.

C. Equipment

List any major equipment and any special materials to be used.

D. Measuring and Test Equipment (M&TE)

Identify M&TE in accordance with the applicable requirements in Attachment B.

E. Set Up Requirements

Identify setup procedures. These may include characterization of site conditions; material to be used, provisions for ensuring prerequisites are met; special measures to be taken in handling, shipping, and storing equipment; and required controlled environmental conditions.

F. Samples Collected or Utilized

Identify samples by unique identification number (reference the applicable sampling plan).

G. Acceptance Criteria

Identify required levels of precision or accuracy, as applicable. Acceptance criteria may be qualitative or quantitative.

H. Personnel

Enter the names of all personnel working on site for each day, visitor's names and organizations, and the time they arrived and departed.

Note: A separate notebook may be maintained for this purpose.

I. Sources of Error

Identify potential sources of error or uncertainty that will be measured or controlled that could affect the results or conclusions. Identify any suspected conditions that may adversely affect the results.

J. Conclusions

At the conclusion of the work, state conclusions or observations, addressing whether the original referenced objectives as stated in the initial entry (reference notebook page entry) were achieved. Incorporate deviations from the original approach into the discussion.

Notebook Entries for Field and Laboratory Measuring and Test Equipment (M&TE)

1. Used in a One-Time-Only Application

M&TE used in a one-time-only application will be calibrated before and after use (reference QP-5.2, Control of Measuring and Test Equipment, subsection 6.3, Calibration of M&TE that is “Calibrated at each use”. If the M&TE become inoperable, or its accuracy is suspected, or it is out of calibration, the **user** notifies the responsible Supervisor. When performing calibrations, the following information must be recorded:

- Identification of the M&TE calibrated.
- Identification of the standard used for calibration (use the ID number shown on the applicable M&TE Report prepared in accordance with QP-5.2, “Control of Measuring and Test Equipment” or document in accordance with the requirements for Consumable Standards per Attachment D of this procedure).
- Procedure used.
- Calibration data.
- Calibrator's name.
- Date of calibration.
- Results of calibration and a statement of acceptability.
- Reference to any action taken in connection with out-of-calibration condition, including the evaluation of the results, as applicable.

2. Calibrated at Each Use

M&TE controlled according to QP-5.2 as calibrated at each use will have the following information recorded:

- Identification of the M&TE calibrated (use the ID number shown on the applicable M&TE Report prepared in accordance with QP-5.2).
- Identification of the standard used for calibration (use the ID number shown on the applicable M&TE Report prepared in accordance with QP-5.2).
- Identification of the Standard Operating Procedure (including the revision level) or the notebook and page number of the procedure used in performing the calibration.
- Calibration data.
- Calibrator's name.
- Date of calibration.
- Results of calibration and statement of acceptability.
- Reference to any action taken with respect to out-of-calibration or nonconforming M&TE including evaluation of results for acceptability.

3. Calibrated on a Set Frequency

- Identification of the M&TE being used (use the ID number shown on the applicable M&TE Report, or the ID number shown on the M&TE label if different from that on the M&TE Report).
- The calibration due date.

Logbook Entries for Laboratory Technical Investigations

A. Description

Enter a statement that describes the proposed work, or reference the study plan, other planning documents, or implementing documents that describe the work to be done. The description may include reference to other notebooks, manuals, texts, etc.

Note: This entry should be made one time at the beginning of the notebook. If the proposed work requirements and/or processes change, an entry must be made to address the change.

B. Methods and Objectives

Describe the objectives of the activity and state the methods (reference the applicable SOP) to be employed. State what technical issues of importance to the project will be addressed by the activity and what aspect of site characterization will be accomplished through the activity. Work performed and the results obtained must be descriptive and entered in detail. Changes to methods will be documented.

C. Equipment

List any major equipment and any special materials to be used. Special materials include items such as specific reagent chemicals or specific labware (e.g., Pyrex instead of plastic). Common laboratory and field equipment does not need to be identified.

D. Measuring and Test Equipment (M&TE)

Identify M&TE and Consumable Standards in accordance with the applicable requirements in Attachment A or Attachment D.

E. Set Up Requirements

Identify setup procedures. These may include characterization of starting materials; provisions for ensuring those experimental prerequisites are met; special measures to be taken in handling, shipping, and storing equipment; and required controlled environmental conditions.

F. Samples Collected or Utilized

Identify samples by unique identification number (reference the applicable sampling plan).

G. Acceptance Criteria

Identify required levels of precision or accuracy, as applicable. Acceptance criteria may be qualitative or quantitative.

H. Sources of Error

Identify potential sources of error or uncertainty that will be measured or controlled that could affect the results or conclusions. Identify any suspected conditions that may adversely affect the results.

I. Conclusions

At the conclusion of the work, state conclusions or observations, addressing whether the original referenced objectives as stated in the initial entry (reference notebook page entry) were achieved. Incorporate deviations from the original approach into the discussion.

Consumable Standards Entries for Laboratory Technical Investigations

The following information for each consumable standard, as applicable, is documented in a notebook.

1. The identifier
 - will be unique, e.g.,
 - ♦ a lot number for chemical,
 - ♦ a purchase request number, or
 - ♦ an alphanumeric identifier using date.
2. The description—both
 - physical form, e.g.,
 - ♦ solid, powder, or
 - ♦ gas and
 - chemical formula, if applicable, e.g.,
 - ♦ sodium chloride.
3. The supplier or source, e.g.,
 - National Institute for Standards and Technology (NIST),
 - Baker Chemical Company, or
 - produced by the supervisor.
4. The date received.
5. The storage location, e.g.,
 - the subcontractor's name, city, and state or
 - the Laboratory
 - ♦ technical area designation and
 - ♦ building and room numbers
6. The designated usage in the ER Project, e.g., for
 - calibration of a pH meter or ion chromatography system or
 - submission as a blind sample to provide quality check of results from outside analytical laboratories.
7. The certified value and its uncertainty.

8. The certification information:
 - a certificate that shows the accuracy and tolerance or stated physical or chemical value, and tractability to NIST or other nationally recognized standard or
 - if standard is not traceable to NIST or equivalent, describe the basis for using the standard, e.g.,
published reports or articles as basis for certification (e.g., Geostandards)
9. Any special handling and storage instructions, e.g., for solutions:
 - tightly capped or
 - refrigerated.
10. The expiration date.
11. The assigned custodian.
12. The supervisor's name.
13. the documentation of usage (i.e., where and how is documentation kept), e.g.,
 - logbooks associated with M&TE that are controlled by QP-5.2 or
 - a logbook maintained by ER Project personnel specifically for documenting the use of standards.
14. The date the standard was removed from ER Project M&TE control system.
15. The reason for removal from ER Project M&TE control system, e.g.,
 - the expiration date arrived,
 - it was used up, or
 - it was found to be in error.
16. If the standard is removed for reasons other than the standard were consumed or the expiration date has been exceeded the Supervisor's approval (e.g., signature and date) authorizing the removal from ER Project control system is required.

Example of an Acceptable Notebook Entry

Page 1

[Enter the traceability designator (e.g., ER2001-xxxx, document catalog number).

Started: [Enter the date the notebook was initiated].

Logbook assigned to: [Enter the name(s) of the individual(s) who will be responsible for maintaining the notebook].

Activity: [Enter the title of the activity (e.g., Water Movement Test, WBS 1.2.3.3.1.2.2)].

Field Team Leader: [Enter the name of the field group leader, laboratory group leader etc.].

[Enter a description of the activity] Such as:

The overall objective of this activity is to determine the rate of water movement downward through the unsaturated zone in the vicinity of Technical Area 21, using measurements of chloride and chlorine isotopic compositions in samples of water, soil, rock collected as part of the YMP site characterization program. The approach is described in the document, "Study Plan for Water Movement Test, SCP Study 8.3.1.2.2.2.

This logbook is used to document the preparation and analysis of samples for ion chromatography analysis of chlorine and bromide concentrations as part of that study. Such analyses serve several purposes: (a) to ensure that sufficient chloride is available in a given solution to be used for chlorine isotopic analyses, (b) to develop chloride profiles in soils and rocks, that may be useful for evaluating the nature of infiltration in these materials.

Activities documented in this logbook are governed by the following procedures:

[Enter procedures used] For example:

LANL-ER-SOP-01.05, Field Quality Control Samples

ER-SOP-02.01, Surface Water Site Assessments

[Enter equipment used] For example:

The following equipment has been used to follow the above SOPs to produced the data recorded in this logbook:

Mettler balance, Model AE-35, Serial #D25126 (calibration controlled by QP-5.3)

Dionex Ion Chromatographic System Model 2000I, Serial #881706 (calibration by user following procedures documented in the notebook).

Table of Contents Example

	Page
Initial entry.....	1
Table of Contents	3–5
How Data for the Water Movement Test are Organized.....	6
LANL-ER Notebooks and Logbooks which may be Associated with this logbook	7
Organization of this logbook	8
Notebook procedure used to obtain and evaluate ion chromatography data	9–31
APPENDIX A – AUTOSAMPLER CARRIAGE RECORDS.....	A-1
Organization and contents	A-1
Carriage records.....	A-2 to A-48
APPENDIX B – PRECISION DATA FOR THE ION CHROMATOGRAPHY SYSTEM. B-1	
Organization and contents	B-1
Precision data for 8/98.....	B-2 to B-6
Table B-1. Precision statement based on analyses of standards, 8/10, 24-25/98	B-2
APPENDIX C – REAGENTS AND STANDARDS.....	C-1
Reagent chemical logsheet	L-2
Logsheet and Certificate of Analysis for NIST – C-1	L-3 to L-4
APPENDIX D – IC LOGBOOK SUMMARY.....	D-1 TO D-5
APPENDIX E – REVIEWER COMMENTS	E-1
Reviewer notice, 1-/26/92	E-2
ER Notebook Closure Exemption, 8/05/98	E-3
Reviewer notice, 9/30/98.....	E-4
Technical review, 10/31/98.....	E-5
Quality Improvement Liaison review, 11/3/98.....	E-6
Attachments	F-7